



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/611,518	07/07/2000	Jae-Yoel Kim	678-509 (P9463)	6612
28249	7590	06/01/2005	EXAMINER	
DILWORTH & BARRESE, LLP 333 EARLE OVINGTON BLVD. UNIONDALE, NY 11553			COLIN, CARL G	
			ART UNIT	PAPER NUMBER
			2136	

DATE MAILED: 06/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/611,518

Applicant(s)

KIM ET AL.

Examiner

Carl Colin

Art Unit

2136

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,21 and 31-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,21 and 31-53 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 July 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) see att.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/25/2005 has been entered.

Response to Arguments

2. In response to communications filed on 3/14/2004, claims 1 and 21 have been amended, claims 2-20 and 22-30 have been cancelled and claims 31-53 have been added. The following claims 1, 21, and 31-53 are presented for examination.

2.1 Applicant's arguments, pages 9-11, filed on 1/12/2005, with respect to the rejection of claims 1 and 21 have been fully considered, but they are not persuasive. Regarding claims 1, 11, 21, and 29, Applicant argues that Dahlman does not disclose managing a scrambling code i.e. relationship between scrambling codes, and a method for assigning a scrambling code.

Examiner disagrees. Dahlman refers to another patent publication in his prior art in which the method of assigning scrambling codes is taught. The step of managing and the step of assigning scrambling codes as claimed in claims 48 and 51 are not disclosed in the specification and they are considered as new matter. Therefore, applicant has not overcome the rejection by amending

Art Unit: 2136

the claims and the rejection of the dependent claims not challenged by applicant still apply in this office action.

Specification

3. The disclosure is objected to because of the following informalities: on page 16, line 17, in the sentence “the delay 722 delays the I-channel signals output from the adder 744” the reference numbers should be revised.

Claim Objections

4. Claims 1, 21, 40-46 are objected to because of the following informalities: in order to avoid rendering the claim indefinite, the term “adapted to” should be corrected. See MPEP § 2106.02(c). Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5.1 Claims 31, 32, 38, 39, 48, 51, and the intervening claims are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The

Art Unit: 2136

claim contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The primary scrambling code and secondary scrambling code as generated in claims 1 and 21 and claimed are not described in the disclosure as claimed in claims 31-32 and 38-39. Because these claims depend on claims 1 and 21 respectively and the scrambling codes in these claims are described in a second embodiment in the disclosure different from the first embodiment (see page 18, lines 19-23) “the second embodiment involves cyclic shift of the m-sequence $m_2(t)$ only other than m_1 to generate scrambling sequences”, claims 31-32 and 38-39 are new matter. In other words the disclosure does not disclose the scrambling codes as generated and claimed in claims 31-32 with the limitations of claim 1 nor in claims 38-39 with the limitations of claim 21. Applicant is required to cancel the new matter in the reply to this Office Action.

Claims 48 and 51 as amended recite “generating a primary scrambling code for a first base station by adding” and “generating a secondary scrambling code for a first base station by adding” “Scrambling codes assigned to the first base station ... and Scrambling codes assigned to the second base station ...” The disclosure on page 18, line 19 through page 19 does not describe claims 48 and 51 as claimed and constitute new matter. The managing and assigning steps in these claims are not described in the specification as claimed. Applicant is required to cancel the new matter in the reply to this Office Action. Claims 50 and 53 are not disclosed either as claimed. Claims 49-50 and 52-53 depend directly on claims 48 and 51 and are rejected on the same rationale.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6.1 **Claims 1, 21, 31-53** are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,339,646 to **Dahlman et al.** in view of US Patent 6,141,374 to **Burns**.

6.2 **As per claims 1, 21, 34, and 41, Dahlman et al.** substantially teaches an apparatus for generating a primary scrambling code (see figure 4) comprising: a first m-sequence generator to generate a first a first m-sequence, by using a plurality of registers with values a_i wherein ($i = 0$ to $c-1$ and where c is the total number of the first registers) (see column 4, line 59 through column 5, line 16); a second m-sequence generator for generating a second m-sequence, by using a plurality of second registers with second-shift register values $j = 0$ to $c-1$ where $c =$ the total number of second registers) (see figure 4); a first adder to add the first m-sequence and the second m-sequence to generate a primary scrambling code (see figure 4); **Dahlman et al** also suggests using plurality of adders for combining channelization codes and scrambling codes to

Art Unit: 2136

produce other secondary scrambling codes or use a modified value or different code phase and not limited to any variations and rearrangements (see column 5, lines 18-35 column 4, lines 40-57). **Dahlman et al** discloses masking step adapted to shift m-sequence cyclically by L chips to generate a number of secondary scrambling associated with a primary scrambling code (column 3, line 60 through column 4, line 6). **Dahlman et al** does not explicitly disclose masking shifting the sequences cyclically by multiplying with a mask value. **Burns** in an analogous art teaches a masking section to mask the first shift register values a_i with a first set of mask values K_i to generate a third m-sequence and further discloses a masking section adapted to shift m-sequence cyclically by L chips to generate a number of secondary scrambling associated with a primary scrambling code and further discloses adding the masking sequence with another sequence (see column 3, line 40 through column 4, line 5) and also discloses the masking is expressed by multiplying mask codes by register values (see **Burns**, column 8, lines 29-67 and figures 3 and 4). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the masking concept of multiplying as disclosed in **Burns** before adding the sequence in **Dahlman** to generate secondary scrambling codes associated with the primary scrambling codes. The motivation to do so is given by **Dahlman** who suggests that additional scrambling codes can be used to increase the number of available codes to avoid a shortage of codes (column 1, lines 36-48) and **Burns** suggests shifts are multiplied to produce new values then the combined masks are then added to produce new state values (column 8, lines 45-61).

As per claims 31-32 and 38-39, the combination of **Dahlman et al** and **Burns** discloses N number of primary scrambling codes and a total number of secondary scrambling codes for each primary code and further discloses a plurality of secondary scrambling codes associated with each primary scrambling code that meets the recitation of wherein the primary scrambling code is one of a plurality of primary scrambling codes and a Kth primary scrambling code is a $((K-1)*M + K)$ th gold code where M is a total of secondary scrambling codes per primary scrambling code and K is between 1 and 512 and wherein the secondary scrambling codes associated with a Kth primary scrambling code are from $((K-1)*M + K + 1)$ th to $((K-1)*M + K + 1)$ th gold codes where M is a total of secondary scrambling codes per primary scrambling code and K is between 1 and 512 (see **Dahlman et al**, column 3, line 60 through column 4, line 6 and lines 40-44).

As per claims 33 and 36, the combination of **Dahlman et al** and **Burns** discloses generating a plurality of secondary codes for one set of primary scrambling code (see **Dahlman et al**, column 5, lines 3-18 and lines 43-47).

Claims 35 and 40 recite similar limitations to claims 1 and 21 performing the same method to generate additional code by using an additional masking value for generating an additional sequence. Both references disclose generating Nth secondary codes. Therefore, claims 35 and 40 are still obvious since this modification requires routine skill in the art, these claims are rejected on the same rationale as the rejection of claims 1 and 21.

As per claims 37 and 47, the combination of **Dahlman et al** and **Burns** discloses the limitation of further comprising the step of delaying at least one of the primary scrambling code and secondary scrambling code to produce a Q-channel component wherein the primary scrambling code and secondary scrambling code are I-channel components (see **Burns**, column 6, lines 1-14 and column 3, lines 53-57). Therefore, these claims are rejected on the same rationale as the rejection of claims 1 and 21.

As per claim 42, the combination of **Dahlman et al** and **Burns** discloses the limitation of wherein the first m-sequence generator is adapted to cyclically shifting the first shift register values and the second m-sequence generator is adapted to cyclically shifting the second shift register values (see **Dahlman et al**, figure 4 and **Burns** column 8, lines 45-61 and see figure 4).

As per claims 43 and 45, the combination of **Dahlman et al** and **Burns** discloses the limitation of wherein the first m-sequence generator is adapted to add predetermined bits of the first shift register values of the first shift registers based on the first generator polynomial of the first m-sequence, right shifting the first shift register values a_i of the first shift registers and replacing the first register value a_{c-1} with the result of the addition of the predetermined register values (see **Dahlman et al**, figure 4 and **Burns** column 8, lines 45-61 and see figure 4).

As per claims 44 and 46 **Dahlman et al**. discloses the limitation of wherein the first m-sequence generator is adapted to add the first shift register value a_0 with a_7 to form a next a_{c-1} and b_0 is added with b_5 , b_7 , and b_{10} to form a next b_{c-1} (see figure 4).

7. **Claims 48-53** are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,339,646 to **Dahlman et al** in view of Foreign Patent Publication WO 99/12284 to **Dahlman et al**.

7.1 **As per claim 48, Dahlman et al** substantially teaches a method, comprising: generating a primary scrambling code for a first base station (column 3, line 60 through column 4, line 6) by adding a first m-sequence and a second m-sequence (figure 4); discloses N number of primary scrambling codes and a total number of secondary scrambling codes for each primary code and further discloses a plurality of secondary scrambling codes associated with each primary scrambling code the primary codes generated by shifting the first m-sequence by a number of chips is also disclosed in figure 4, that meets the recitation of generating a secondary scrambling code for the first base station, the generated secondary scrambling code belonging to a scrambling code group having $((K-1)*M+K)$ th through $(K*M+K)$ th scrambling codes assigned to the first base station and having $((K-1)*M+K)$ th through $((K+1)*M+K+1)$ th scrambling codes assigned to a second base station and having wherein M is a total number of secondary scrambling codes per primary scrambling code and K is a natural number, the $((K-1)*M+K)$ th and $(K*M+K+1)$ th scrambling codes being the primary scrambling code of the first base station and a primary scrambling code of the second base station, respectively, and the $((K-1)*M+K+1)$ th through $((K+1)*M+K+1)$ th scrambling codes are generated by shifting the first m-sequence by $((K-1)*M+K)$ through $((K+1)*M+K)$ chips, respectively; (column 3, line 60 through column 4, line 6 and figure 4)

adding the shifted first m-sequence to the second m-sequence, wherein the $((K-1)*M+K+1)$ th through $((K+1)*M+K+1)$ th scrambling codes that are generated by shifting the first m-sequence by $((K-1)*M+K)$ through $((K+1)*M+K)$ chips, respectively, are used to separate the $((K-1)*M+K)$ th through $(K*M+K)$ th scrambling codes assigned to the first base station from the $(K*M+K+1)$ th through $((K+1)*M+K+1)$ th scrambling codes assigned to the second base station (see figure 4).

Dahlman et al does not explicitly disclose the assigning to a second base station but refers to a prior art where the managing and assigning of multiple codes are disclosed (column 1, lines 35-48).

Dahlman et al in Foreign Patent Publication WO 99/12284 discloses assigning spreading codes to base stations (see WO 99/12284 figure 5, 7, and 8 with description). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the method described in US Patent 6,339,646 to **Dahlman et al** to generate the scrambling codes and combining it with the teaching in the Foreign Publication WO 99/12284 to assign the codes to the base stations. The motivation or suggestion to do so is given by **Dahlman** who suggests that additional scrambling codes can be used to increase the number of available codes to avoid a shortage of codes and refers to the foreign publication for generating and assigning multiple code sets (column 1, lines 36-48).

Claim 51 recites similar limitations to claim 48 except for reciting managing a first base station and managing a second base station using the same method. The method of assigning

disclosed by **Dahlman** in the Foreign Patent Publication meets the recitation of managing the base stations. Therefore claim 51 is rejected on the same rationale as the rejection of claim 48.

As per claims 49-50 and 52-53 Dahlman et al discloses shift register memory for storing scrambling codes and bits of data (see column 4, line 59 through column 5, line 16 and figure 4); the scrambling codes of these claims are similar to the scrambling codes in claims 48 and 51 and are rejected on the same rationale.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure as the art discloses multiple access coding for radio communications.

US Patents: 5,771,288 Dent et al ; 3,818,442 Solomon ; 6,728,305 Ogawa et al ;
6,728,411 Ogawa et al ; 6,108,369 Ovesjo et al ; 6,459,722 Sriram et al ; 6,574,205 Sato.

8.1 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carl Colin whose telephone number is 571-272-3862. The examiner can normally be reached on Monday through Thursday, 8:00-6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2136

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cc

Carl Colin

Patent Examiner

May 25, 2005

Ayaz Sheikh

AYAZ SHEIKH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100